A. INTRODUCTION

The potential for air quality impacts during the operation of the proposed Haverstraw Water Supply Project is discussed below. Air quality impacts can be either direct or indirect. Direct impacts are impacts that result from emissions generated by stationary sources at a development site, such as emissions from on-site fuel combustion for heating and power. Indirect impacts are impacts that are caused by emissions from nearby existing stationary sources (impacts on the Proposed Project), or by emissions from on-road vehicle trips generated by a project or other changes to future traffic conditions due to the project. A discussion of the air quality impacts of the Proposed Project during construction is provided in Chapter 15, "Construction Impacts."

This chapter of the DEIS includes the following sections:

Section B: Air Quality Regulations, Standards, and Benchmarks.
Section C: Existing Conditions.
Section D: The Future Without the Proposed Project.
Section E: Probable Impacts of the Proposed Project.

The analysis in this chapter concludes that the heat and hot water systems and emergency generators at the intake pumping station and water treatment plant would generate insignificant air emissions. With a small number of employees present at the Project Sites and minimal truck trips associated with operations of the Proposed Project, the low level of passenger vehicle and truck traffic would not have the potential to result in a significant impact on air quality or contribute to any violation of any National or State Ambient Air Quality Standard. Overall, the operation of the Proposed Project would not significantly increase air emissions, result in a violation of any National or State Ambient Air Quality Standard, or result in any significant adverse air quality impacts.

B. AIR QUALITY REGULATIONS, STANDARDS, AND BENCHMARKS

NATIONAL AND STATE AIR QUALITY STANDARDS

As required by the Clean Air Act (CAA), primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO_2, ozone, respirable PM (both $PM_{2.5}$ and PM_{10}), SO_2, and lead (referred to as "criteria pollutants"). The primary standards represent levels that are requisite to protect the public health, allowing an adequate margin of safety. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. The primary and secondary standards are the same for NO_2, ozone, lead, and PM, and there is no secondary standard for CO. The NAAQS are presented in Table 14-1. The NAAQS for CO, NO_2, and SO_2 have also been adopted as the ambient air quality standards for New York State, but are defined on a running 12-month basis rather than for

calendar years only. New York State also has standards for total suspended particulate matter (TSP), settleable particles, non-methane hydrocarbons (NMHC), and ozone which correspond to federal standards that have since been revoked or replaced, and for beryllium, fluoride, and hydrogen sulfide (H_2S).

Table 14-1
National Ambient Air Quality Standards (NAAQS)

Pollutant	Primary		Secondary	
	ppm	µg/m^3	Ppm	µg/m^3
Carbon Monoxide (CO)				
8-Hour Average (1)	9	10,000	None	
1-Hour Average (1)	35	40,000		
Lead				
3-Month Average (5)	NA	1.5	NA	1.5
Nitrogen Dioxide (NO_2)				
Annual Average	0.053	100	0.053	100
Ozone (O_3)				
8-Hour Average (2)	0.075	150	0.075	150
Respirable Particulate Matter (PM_{10})				
24-Hour Average (1)	NA	150	NA	150
Fine Respirable Particulate Matter ($PM_{2.5}$)				
Average of 3 Annual Means	NA	15	NA	15
24-Hour Average (3,4)	NA	35	NA	35
Sulfur Dioxide (SO_2)				
Annual Arithmetic Mean	0.03	80	NA	NA
Maximum 24-Hour Average (1)	0.14	365	NA	NA
Maximum 3-Hour Average (1)	NA	NA	0.50	1,300

Notes: ppm – parts per million
µg/m^3 – micrograms per cubic meter
NA – not applicable

All annual periods refer to calendar year.

PM concentrations (including lead) are in µg/m^3 since ppm is a measure for gas concentrations. Concentrations of all gaseous pollutants are defined in ppm and approximately equivalent concentrations in µg/m^3 are presented.

(1) Not to be exceeded more than once a year.

(2) 3-year average of the annual fourth highest daily maximum 8-hr average concentration. EPA has reduced these standards down from 0.08 ppm, effective May 27, 2008.

(3) Not to be exceeded by the annual 98th percentile when averaged over 3 years.

(4) EPA has reduced these standards down from 65 µg/m^3, effective December 18, 2006.

(5) EPA has proposed to lower these standards to a range of 0.1 – 0.3 µg/m^3, which is expected to be finalized by September 15, 2008.

Source: 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standards.

The U.S. Environmental Protection Agency (EPA) has revised the NAAQS for PM, effective December 18, 2006. The revision included lowering the level of the 24-hour $PM_{2.5}$ standard from 65 µg/m^3 to 35 µg/m^3 and retaining the level of the annual standard at 15 µg/m^3. The PM_{10} 24-hour average standard was retained and the annual average PM_{10} standard was revoked. EPA has

also revised the eight-hour ozone standard, lowering it from 0.08 to 0.075 parts per million (ppm), effective in May 2008.

On May 20, 2008, EPA proposed to revise the primary and secondary standards for lead within the range of 0.10 to 0.30 $\mu g/m^3$. With regard to the averaging time and form of the standard, EPA proposed two options: to retain the current averaging time of a calendar quarter and the current not-to-be exceeded form, revised to apply across a three-year span; or to revise the averaging time to a calendar month and the form to the second-highest monthly average across a three-year span. EPA is proposing that the current lead NAAQS remain in place for one year following the effective date of attainment designations for any new or revised NAAQS before being revoked, except in current non-attainment areas, where the existing NAAQS will not be revoked until the affected area submits, and EPA approves, an attainment demonstration for the revised lead NAAQS. The revised standards are expected to be finalized by October 15, 2008.

NAAQS ATTAINMENT STATUS AND STATE IMPLEMENTATION PLANS

The CAA, as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by EPA, the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the CAA.

In 2002, EPA re-designated Rockland County as in attainment for CO. The CAA requires that a maintenance plan ensure continued compliance with the CO NAAQS for former non-attainment areas. New York City is also committed to implementing site-specific control measures throughout the city to reduce CO levels, should unanticipated localized growth result in elevated CO levels during the maintenance period.

On December 17, 2004, EPA took final action designating Rockland County, as well as the five New York City counties, Nassau, Suffolk, Westchester, and Orange, as a $PM_{2.5}$ non-attainment area under the CAA due to exceedance of the annual average standard. New York State has submitted a draft SIP to EPA, dated April 2008, designed to meet the annual average standard by April 8, 2010, which will be finalized after public review.

As described above, EPA has revised the 24-hour average $PM_{2.5}$ standard. Attainment designations for the revised 24-hour $PM_{2.5}$ standard should be effective by April 2010, and state and local governments in areas that are designated as non-attainment are required to develop SIPs by April 2013 which should be designed to attain the revised 24-hour $PM_{2.5}$ standards by April 2015, although this may be extended in some cases up to April 2020 (these milestones may occur at earlier dates).

Nassau, Rockland, Suffolk, Westchester, Lower Orange County Metropolitan Area (LOCMA), and the five New York City counties had been designated as a severe non-attainment area for the ozone one-hour standard. In November 1998, New York State submitted its *Phase II Alternative Attainment Demonstration for Ozone*, which was finalized and approved by EPA effective March 6, 2002, addressing attainment of the one-hour ozone NAAQS by 2007. These SIP revisions included additional emission reductions that EPA requested to demonstrate attainment of the standard, and an update of the SIP estimates using the latest versions of the mobile source emissions model, MOBILE6.2, and the nonroad emissions model, NONROAD—which have been updated to reflect current knowledge of engine emissions and the latest mobile and nonroad engine emissions regulations.

On April 15, 2004, EPA designated these same counties as moderate non-attainment for the eight-hour ozone standard which became effective as of June 15, 2004 (LOCMA was moved to the Poughkeepsie moderate non-attainment area for eight-hour ozone). EPA revoked the one-hour standard on June 15, 2005; however, the specific control measures for the one-hour standard included in the SIP are required to stay in place until the eight-hour standard is attained. The discretionary emissions reductions in the SIP would also remain but could be revised or dropped based on modeling. On February 8, 2008, the New York State Department of Environmental Conservation (NYSDEC) submitted final revisions to a new SIP for ozone to EPA. NYSDEC has determined that achieving attainment for ozone before 2012 is unlikely, and has therefore made a request for a voluntary reclassification of the New York non-attainment area as "serious".

In March 2008, EPA strengthened the eight–hour ozone standards. EPA expects designations to take effect no later than March 2010 unless there is insufficient information to make these designation decisions. In that case, EPA will issue designations no later than March 2011. SIPs would be due three years after the final designations are made.

DETERMINING THE SIGNIFICANCE OF AIR QUALITY IMPACTS

New York's State Environmental Quality Review Act (SEQRA) regulations state that the significance of a likely consequence (i.e., whether it is material, substantial, large, or important) should be assessed in connection with its setting (e.g., urban or rural), probability of occurrence, duration, irreversibility, geographic scope, magnitude, and the number of people affected.[1] In terms of the magnitude of air quality impacts, any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see Table 14-1) would be deemed to have a potential significant adverse impact. In addition, in order to maintain concentrations lower than the NAAQS in attainment areas, or to ensure that concentrations will not be significantly increased in non-attainment areas, threshold levels have been defined for certain pollutants; any action predicted to increase the concentrations of these pollutants above the thresholds would be deemed to have a potential significant adverse impact, even in cases where violations of the NAAQS are not predicted.

C. EXISTING CONDITIONS

SOURCES OF AIR EMISSIONS NEAR THE PROJECT SITES

As discussed in Chapter 3, "Land Use, Zoning, and Other Programs," the area near the Project Sites has a mix of industrial and residential uses. The Water Treatment Plant Site is located on a portion of the Town of Haverstraw Landfill, which is no longer in active use. The adjacent Haverstraw Joint Regional Sewage Treatment Plant (JRSTP) is the primary source of air emissions in the immediate area. Near the Intake Site, the gypsum conveyor operated by the U.S. Gypsum Company (USG) is the primary stationary source of air emissions in the immediate area. Existing traffic on Beach Road, boats entering and leaving the Haverstraw Marina, and the trains that currently use the existing CSX railroad right-of-way adjacent to the Water Treatment Plant Site are mobile sources that affect the existing air quality in the immediate area of the Project Sites.

[1] State Environmental Quality Review Act § 617.7.

EXISTING MONITORED AIR QUALITY CONDITIONS

Monitored background concentrations of SO_2, NO_2, CO, ozone, lead, PM_{10}, and $PM_{2.5}$ for the study area are shown in Table 14-2. These values (2006) are based on recent monitored data that have been made available by NYSDEC. In the case of the eight-hour ozone and 24-hour $PM_{2.5}$, concentrations reflect three years of data, consistent with the basis for these standards. There were no monitored violations of NAAQS at these monitoring sites, with the exception of the maximum 24-hour $PM_{2.5}$ concentration, which is above the recently revised NAAQS.

Table 14-2
Representative Monitored Ambient Air Quality Data

Pollutants	Location	Units	Period	Concentration	Exceeds Federal Standard?	
					Primary	Secondary
CO	Botanical Gardens, Bronx County	ppm	8-hour	1.7	N	N
			1-hour	2.2	N	N
SO_2	Mt. Ninham, Putnam County	ppm	Annual	0.002	N	-
			24-hour	0.011	N	-
			3-hour	0.019	-	N
Respirable particulates (PM_{10})	P.S. 59, Manhattan	$\mu g/m^3$	Annual	23	-	-
			24-hour	60	N	N
Respirable particulates ($PM_{2.5}$)	Newburgh, Orange County	$\mu g/m^3$	Annual	9.6	N	N
			24-hour	27.5	N	N
NO_2	Botanical Gardens, Bronx County	ppm	Annual	0.025	N	N
Lead	Wallkill, Orange County	$\mu g/m^3$	3-month	0.08	N	-
Ozone (O_3)	White Plains, NY	ppm	1-hour	0.11 [(1)]	Y	Y
			8-hour	0.083	Y	Y

Notes:
[1] The 1-hour ozone NAAQS has been replaced with the 8-hour standard; however, the maximum monitored concentration is provided for informational purposes.
Source: NYSDEC, 2006 New York State Ambient Air Quality Data.

D. THE FUTURE WITHOUT THE PROPOSED PROJECT

This DEIS assumes that no development would occur on the Project Sites or in the immediate area in the future without the Proposed Project. Air quality in the area near the Project Sites would likely be very similar to existing conditions.

E. PROBABLE IMPACTS OF THE PROPOSED PROJECT

EMISSION SOURCES

Adequate electric power and natural gas are available in the vicinity of the Project Sites to provide the Project's energy needs. As described in Chapter 2, "Project Description," United Water New York Inc. (United Water) is currently investigating the provision of alternative power sources for the Proposed Project as part of the Project's initiative for sustainable design.

This analysis assumes fossil fuel-fired equipment would be used to provide building heat and hot water. The heating demand would be very small and therefore, emissions from HVAC equipment would be very low. It is anticipated that any boilers, space heaters, and hot water heaters that would be installed would be below 20 million British Thermal Units per hour (MMBtu/hr) and therefore exempt from NYSDEC permitting requirements pursuant to 6 NYCRR Part 201.

Emergency generators would be installed at the Intake Site and the Water Treatment Plant Site to serve the equipment and facilities in the event of the loss of utility electrical power. At the new intake pumping station, it is anticipated that one 800 kilowatt standby generator would be provided. At the water treatment plant, one or more standby emergency generators with a combined capacity of 2.5 megawatts (MW) are anticipated. United Water typically uses natural gas to fuel its emergency generators. For purposes of this air quality analysis, however, it is assumed that the emergency generators could utilize diesel fuel.

The emergency generators would be tested periodically for a short period to ensure their availability and reliability in the event of a sudden loss in utility electrical power. They could also be utilized to reduce the utility electrical demand of the Proposed Project at certain times. Emergency generators are exempt from NYSDEC air permitting requirements, but if used during non-emergency periods would be required to obtain an air permit or registration. The generators would be installed and operated in accordance with EPA requirements, as well as other applicable codes and standards. The EPA new source performance standards (NSPS) at 40 CFR 60 Subpart IIII and JJJJ regulate NO_x, CO, non-methane hydrocarbons (NMOC) and particulate matter from new, modified, and reconstructed stationary and emergency combustion ignition (CI) engines, depending on date of manufacture and engine capacity. In addition, for engines that are subject to these regulations, beginning October 1, 2007, engines that use diesel fuel must use fuel that has a maximum sulfur content of 500 ppm or less. Beginning June 1, 2010, the fuel used in the engines must have a maximum sulfur content of 15 ppm or less. In addition, generators would be required to meet stringent emission limits for particulate matter and NO_x. The regulations include monitoring and reporting requirements to help ensure that the applicable emission limits are met.

Potential air quality impacts from the testing and operation of the generators would be insignificant. Testing would occur one hour per month per generator, and individual generators would be tested at different times. Operation of the generators during longer periods associated with peak shaving would not result in any significant adverse air quality impacts based on the estimated emissions, and distance to the nearest sensitive receptor (approximately 100 feet).

Air emissions generated by mobile sources associated with the operation of the Proposed Project would mainly consist of trucks delivering water treatment chemicals and other materials and removing dewatered sludge from the Project Sites, and a small number of employee and visitor vehicles. No hazardous chemicals would be delivered and/or utilized at the Project Sites that would have the potential for harmful effects on nearby sensitive receptors.

The maximum hourly incremental traffic from the Proposed Project would be very low based on a projected project employment of fewer than 10 people. This extremely low level of passenger vehicle and truck traffic would not have the potential to result in a significant impact on air quality or contribute to any violation of any National or State Ambient Air Quality Standard. Therefore, a quantified assessment of on-street mobile source emissions is not warranted.

CONCLUSIONS

The heat and hot water systems and generators at the intake pumping station and water treatment plant would generate insignificant air emissions. With a small number of employees present at the Project Sites and minimal truck trips associated with operations of the Proposed Project, the low level of passenger vehicle and truck traffic would not have the potential to result in a significant impact on air quality or contribute to any violation of any National or State Ambient Air Quality Standard. Overall, the operation of the Proposed Project would not significantly increase air emissions, result in a violation of any National or State Ambient Air Quality Standard, or result in any significant adverse air quality impacts. ✷